FEDERAL COMMUNICATIONS COMMISSION
and INDUSTRY CANADA

RADIO FREQUENCY INTERFERENCE STATEMENTS

Class B Digital Device. This equipment has been tested and found to comply with the limits for a Class B computing device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or telephone reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult an experienced radio/TV technician for help.

Caution:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To meet FCC requirements, shielded cables and power cords are required to connect this device to a personal computer or other Class B certified device. This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

LPR1101, version 1

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3. Rear Panel Connections on the LPR1131

The PoE extender provides automatic crossover detection, making it simple to connect to another device without crossover cable.
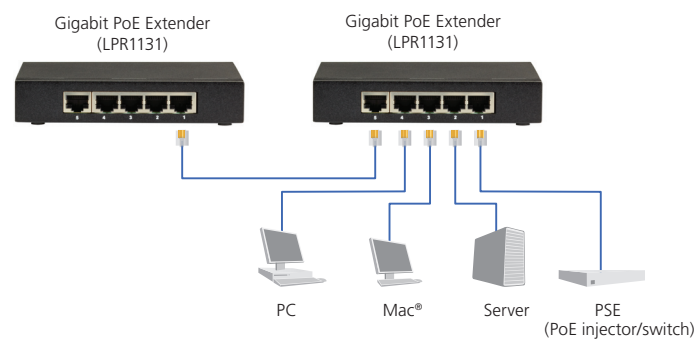

Figure 3-1. Rear panel connections.

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4. Power and Extend Distance

Power is supplied through CAT5/5e/6 cable from the PSE and extends the distance up to 328 feet (100 m) to the PD port of another extender.
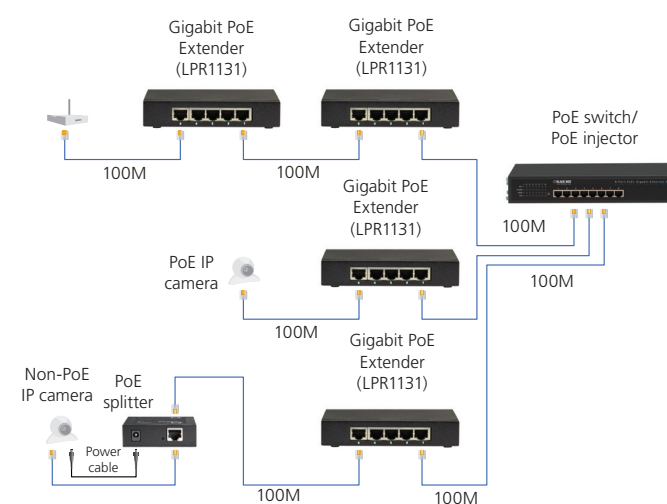

Figure 4-1. Typical application.

BLACK BOX
NETWORK SERVICES

LPR1101
LPR1131

Gigabit PoE Extender

Extend the distance and provide 48-VDC power to Ethernet devices.

Both models have (1) PD in, and (1) PSE out port.
With LPR1131, you can also add a local 3-port switch.

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1. Specifications

Certification — FCC Class A, CE, RoHS

Media Type — CAT5, 5e, 6 UTP or STP cable

Connectors — LPR1101: (2) RJ-45, including (1) PD and (1) PSE; LPR1131: (5) RJ-45, including (1) PD and (1) PSE; (3) RJ-45 ports for switching

Indicators — LPR1101: (6) LEDs: (1) PoE in, (1) PoE out, (2) 1000M, (2) Link/Act; LPR1131: (12) LEDs: Power: (1) PoE out, (1) PoE in, (5) 1000M, (5) Link/Act

Temperature — Operating: 32 to 104° F (0 to 40° C); Storage: -4 to 194° F (-20 to 90° C)

Power — Input: 48 VDC; Output: 48 VDC; Consumption (maximum): LPR1101: 2 watts, LPR1131: 6 watts

Size — 0.9"H x 5.1"W x 3"D (2.4 x 13 x 7.7 cm)

Weight — 0.4 lb. (0.2 kg)

2. Overview

2.1 Introduction

The Gigabit PoE Extender (LPR1101) provides (1) 10-/100-/1000-Mbps PD input port and (1) 10-/100-/1000-Mbps PSE output port. The LPR1131 has the same ports as the LPR1101, plus it also has a 3-port 10-/100-/1000-Mbps switch. Both extenders comply with the IEEE 802.3af standard.

You can connect the PSE port of one extender to the PD port of another extender over up to 328 feet (100 m) of CAT5/5e/6 cable. Each hop uses 2.5 W and reduces the power available on the PSE port by that amount.

Depending on the power required by the PD device connected to the PSE port, the extender will determine how many hops you can go before you do not have enough power available to power the PD device.

2.2 Features

• LPR1131 only: combines a 3-port 10-/100-/1000-Mbps switch with a 1-port PoE extender.

• LPR1101: functions as a 1-port PoE extender.

• Both LPR1101 and LPR1131 have (1) PD (data + power in) port and (1) PSE (data + power out) port.

• IEEE 802.3af Powered Device (PD) (data + power in) gets power from a Power Sourcing Equipment (PSE).

• IEEE 802.3af Power Sourcing Equipment (PSE) provides power to a Powered Device (PD).

• Unit is palm-sized with a metal case.

• Auto-learns networking configurations.

• Autodetects full-/half-duplex modes for any port.

• Provides dedicated full-duplex 2000 Mbps bandwidth.

• Complies with IEEE 802.3x flow control for full-duplex operation and backpressure flow control for half-duplex operation.

• Supports Auto-MDI/MDI-X for any port.

• Unit is smart plug-and-play.

2.3 What's Included

• Gigbit PoE Extender (LPR1101 or LPR1131)

• This user's manual

2.4 Hardware Description

Figures 2-1 through 2-4 show the front and back panels of the extenders. Tables 2-1 and 2-2 describe their components.
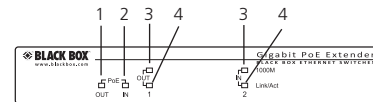
2.4.1 LPR1101

Figure 2-1. LPR1101 front panel.

Figure 2-2. LPR1101 back panel.

Table 2-1. LPR1101 components.

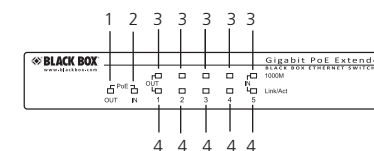| Number in Figures 2-1 and 2-2	Component	Description
1	(1) PoE Out LED	Lights to indicate PoE out on Port 1.
2	(1) PoE In LED	Lights to indicate PoE in on Port 2.
3	(2) 1000M LEDs	Lights when data rate is 1000 Mbps. Blinking when data rate is 100 Mbps. Off when data rate is 10 Mbps.
4	(2) Link/Act LEDs	On when port is connected. Off when there is no connection. Flashing when data is transmitted or received.
5	(2) RJ-45 connectors	Port 1: (1) output (PSE), Port 2: (1) input (PD)

2.4.2 LPR1131

Figure 2-3. LPR1131 front panel.

Figure 2-4. LPR1131 back panel.

Table 2-2. LPR1131 components.

Number in Figures 2-3 and 2-4	Component	Description
1	(1) PoE Out LED	Lights to indicate PoE out on Port 1.
2	(1) PoE In LED	Lights to indicate PoE in on Port 5.
3	(5) 1000M LEDs	Lights when data rate is 1000 Mbps. Blinking when data rate is 100 Mbps. Off when data rate is 10 Mbps.
4	(5) Link/Act LED	On when port is connected. Off when there is no connection. Flashing when data is transmitted or received.
5	(5) RJ-45 connectors	Port 1: (1) output (PSE), Port 5: (1) input (PD), (3) Ethernet switch ports